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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

TH

Office Action Summary	Application No.	Applicant(s)	
	10/810,249	LEE ET AL.	
	Examiner	Art Unit	
	David S. Kim	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. **Claim 1** is objected to because of the following informalities:

In claim 1, under the "descrambling" step, "said provided scrambling data" lacks antecedent basis since there is no step of *providing*. The intended phrase may simply be "said scrambling data".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1-3, 6-8, 11-13, and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (hereinafter the "APA") in view of Nishigaki et al. (English machine-translation of JP 2003-092583 A, hereinafter "Nishigaki") and Moehrmann (U.S. Patent No. 5,509,077).

Regarding claim 1, the APA discloses:

An Ethernet-PON (Passive Optical Network) accommodating real-time broadcast and/or image signals and configured for providing security for the accommodated signals, comprising:

an OLT (Optical Line Terminal) (100 in Fig. 1) for:

electro-optically converting (E/O 116) a digital data signal (digital broadcast signal on p. 4, l. 9),

electro-optically converting (implied on p. 3, l. 17-20) Ethernet ("Ethernet-PON or EPON" on p. 2, l. 8) communication data received through an IP (Internet Protocol) network (IP network in Fig. 1),

coupling the converted digital and communication data (coupling of broadcast signal output and IP signal output in Fig. 1), and

transmitting the coupled signal (transmission downstream in Fig. 1);

a plurality of ONTs (Optical Network Terminals) (200-1 to 200-N in Fig. 1), each ONT:

receiving from the OLT an optical signal (optical signal(s) from optical splitter 118),

separating the received optical signal into said converted digital and Ethernet communication data (separate broadcast receiver 119 and separate receiver 120 for Ethernet transmissions),

photoelectrically converting (implied to occur in each ONT) the separated data,

selecting broadcast and/or image data from the photoelectrically converted digital data to produce an output signal (output selected by 122),

outputting the separated, converted Ethernet ("Ethernet-PON or EPON" on p. 2, l. 8) communication data and said output signal to a corresponding user (user implied to receive the output from 122 and 123),

receiving an upstream Ethernet ("Ethernet-PON or EPON" on p. 2, l. 8) communication signal information from the user (upstream signal from transmitter 121), and

outputting to the OLT said upstream Ethernet ("Ethernet-PON or EPON" on p. 2, l. 8) communication signal (output from transmitter 121) through the path for transmitting said Ethernet ("Ethernet-PON or EPON" on p. 2, l. 8) communication signal (path from transmitter 121); and

an optical splitter (optical splitter 118) for:

splitting a signal from the OLT among the plural ONTs,

coupling signals from the plural ONTs to create a combined signal (combined upstream signal to 100), and

transmitting to the OLT said combined signal (transmission upstream to 100).

The APA does not expressly disclose:

the OLT for:

switching *between a plurality of digital broadcast and/or digital image data received from an external broadcast provider, according to respective* ***broadcast and/or image selection information*** *of users received from the users,*

dynamically scrambling *the switched digital data on a user-by-user basis,*

multiplexing *the scrambled digital data into a single signal,*

electro-optically converting ***individual user associated scrambling data;***

each ONT:

selecting broadcast and/or image data from the photoelectrically converted digital data ***according to the corresponding broadcast and/or image selection information,***

descrambling *the selected broadcast and/or image data on a user-by-user basis based on said provided scrambling data to produce an output signal,*

receiving broadcast and/or image selection information *from the user, and*

outputting to the OLT ***said broadcast and/or image selection information.***

However, these limitations are known in the art. First, consider the teachings of Nishigaki (e.g., abstract) for effectively utilizing bandwidth. Nishigaki teaches the OLT limitations regarding the

"switching" (switch 11 in Drawing 2), the "broadcast and/or image selection information" (e.g., "reception request" in abstract), and the "multiplexing" (implied in the multiplexed output from switch 11 to PON interface 13 in Drawing 2). Nishigaki also teaches the ONT limitations regarding the "broadcast and/or image selection information" (e.g., "reception request" in abstract, channel tables in Drawings 5 and 8). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement these teachings of Nishigaki in the system of the APA. One of ordinary skill in the art would have been motivated to do this for the benefit of efficient bandwidth usage (Nishigaki, paragraph [0079]). That is, the teachings of Nishigaki enable one to avoid unnecessary bandwidth usage by omitting transmission of channels that have not been requested (Nishigaki, paragraph [0079]). Also, the teachings of Nishigaki enable one to improve bandwidth usage efficiency by allocating larger bandwidth (Nishigaki, "high speed" in paragraph [0079]) for the transmission of channels have been requested (Nishigaki, paragraph [0079]).

Next, consider the teachings of Moehrmann. Moehrmann teaches the limitations regarding the "dynamically scrambling" and the "descrambling based on said provided scrambling data" (scrambler and descrambler in Fig. 1; "dynamically" is shown, for example, through the teaching that the "initial setting...can be repeatedly modified" in col. 5, l. 22-26 and the teaching that "the structure of scrambler and descrambler...can be modified" in col. 5, l. 46-47; "based on the provided scrambling data" is shown, for example, through the teaching that "information about the structure and the initial setting...are transmitted to the receiver" in col. 7, l. 4-7 and the teaching that "decoding in the descrambler" is implied to use this "information about the structure and the initial setting" to descramble in col. 6, l. 18-21). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement such teachings in the system of the APA in view of Nishigaki. One of ordinary skill in the art would have been motivated to do this to provide the benefit of data security (Moehrmann, abstract).

Finally, regarding the limitation of "electro-optically converting individual user associated scrambling data", notice the individual user associated scrambling data of Moehrmann (e.g., "information about the structure and the initial setting" in col. 7, l. 4-5, this scrambling data being independent "for every individual connected subscriber" in col. 7, l. 8-10). This scrambling data is transmitted from the

distribution center/OLT to the receiver/ONT (col. 7, l. 6-7). Notice that the environment of the prior art of record is an optical network (Moehrmann, col. 7, l. 35-36; APA, Fig. 1), so communication signals through this optical network are implied to be optical, including this scrambling data. Moreover, in general, data signals of the prior art of record are electrical (APA, implied on p. 3, l. 17-20; Nishigaki, paragraph [0029]; Moehrmann, electronic circuitry in Fig. 3, col. 6, l. 56) before transmission over the optical network, which implies "electro-optically converting" data signals. Therefore, the prior art of record strongly suggests that one would also perform the step of "electro-optically converting individual user associated scrambling data" to communicate this scrambling data through the optical network of the prior art of record.

Regarding claim 2, the APA in view of Nishigaki and Moehrmann discloses:

The Ethernet-PON according to claim 1, wherein the OLT receives digital broadcast data and digital image data, and wherein each of the plurality of ONTs includes:

a device for separating an optical signal received from the OLT into an Ethernet (APA, "Ethernet-PON or EPON" on p. 2, l. 8) communication signal of wavelength λ_{DOWN} and a broadcast/image signal of wavelength λ_B (APA, Fig. 1, 120 receives λ_{DOWN} and 119 receives λ_B);

an optical receiver for receiving the separated Ethernet (APA, "Ethernet-PON or EPON" on p. 2, l. 8) communication signal of wavelength λ_{DOWN}, and converting the received signal of wavelength λ_{DOWN} into an electrical signal (APA, Fig. 1, 120);

another optical receiver for receiving the separated broadcast/image signal of λ_B, and converting it into an electrical signal (APA, Fig. 1, 119);

an Ethernet-PON ONT function processor for performing ONT functions (APA, Fig. 1, 123);

another optical transmitter for receiving broadcast/image selection information (e.g., Nishigaki, "reception request" in abstract) and an Ethernet (APA, 123-1 in Fig. 1, "Ethernet-PON or EPON" on p. 2, l. 8) communication signal to be transmitted to the OLT from a corresponding user through the Ethernet-PON ONT function processor (APA, Fig. 1, signal through 121), and transmitting said broadcast/image information and a communication signal as an optical signal λ_{UP} (APA, Fig. 1, signal from 121);

a broadcast/image channel selector & broadcast/image adapter for selecting a broadcast/image signal according to the broadcast/image selection information selected by the user (Nishigaki, channel setup equipment 12 and switch 11 in Drawing 2), and recovering an associated original broadcast/image channel (Nishigaki, abstract);

a descrambler for descrambling the broadcast/image signal recovered through the channel selector & broadcast/image adapter, and transferring the descrambled, recovered signal to the user (Moehrmann, descrambler in Fig. 1); and

a descrambler controller for controlling the descrambler to perform the descrambling operation (Moehrmann, microprocessor 9 in Fig. 3).

The APA in view of Nishigaki and Moehrmann does not expressly disclose:

the device for separating an optical signal received from the OLT into an Ethernet communication signal of wavelength λ_{DOWN} and a broadcast/image signal of wavelength λ_B being a wavelength division multiplexing (WDM) coupler.

However, WDM couplers are extremely well known and standard devices in the art for providing this separating function.

The APA in view of Nishigaki and Moehrmann does not expressly disclose:

a descrambler controller for controlling the descrambler to perform the descrambling operation *by transferring the scrambling information corresponding to the ONT from the Ethernet-PON ONT function processor to the descrambler.*

However, notice line 10 in Fig. 3 of Moehrmann. This line is connected to the "computer of the reception side" (Moehrmann, col. 7, l. 11-14). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to arrange the descrambler controller to control the descrambler by transferring information from the Ethernet-PON ONT function processor to the descrambler. One of ordinary skill in the art would have been motivated to do this since the Ethernet-PON ONT function processor of the APA in Fig. 1 is an obvious "computer of the reception side". Accordingly, an obvious

variation of the system of the APA in view of Nishigaki and Moehrmann would include a descrambler controller (Moehrmann, microprocessor 9 in Fig. 3) for controlling the descrambler (Moehrmann, descrambler in Fig. 1) to perform the descrambling operation *by transferring the scrambling information* (Moehrmann, information from line 10 in Fig. 3) *corresponding to the ONT from the Ethernet-PON ONT function processor* (APA, 112 in Fig. 1 as "computer of the reception side" in Moehrmann, col. 7, l. 11-14) *to the descrambler.*

Regarding claim 3, the APA in view of Nishigaki and Moehrmann discloses:

The Ethernet-PON according to claim 2, wherein specific functions and initial states are assigned to the ONTs, respectively, to allow the respective scramblers and descramblers to perform the scrambling and descrambling operations (Moehrmann, col. 7, l. 34-42).

Regarding claim 6, the APA in view of Nishigaki and Moehrmann discloses:

The Ethernet-PON according to claim 1, wherein the OLT includes:

a broadcast/image channel selection switch for receiving external MPEG (Motion Picture Experts Group) broadcast and image data, and switching and outputting said broadcast and image data on a user-by-user basis (Nishigaki, switch 11 in Drawing 2, MPEG is a well-known standard and an obvious limitation);

a plurality of scramblers for scrambling broadcast/image channels outputted from the broadcast/image channel selection switch on a user-by-user basis (Moehrmann, col. 4, l. 1-10, each user has its respective scrambler, and it is obvious to scramble channels by each respective scrambler after the channels have been assigned by the switch);

a multiplexer for receiving the scrambled broadcast/image signals from the plural scramblers, and combining them into a single broadcast/image signal (notice the multiplexed signal output from OLT 100 in Fig. 1 of the APA and from OLT 1 in Drawing 2 of Nishigaki);

a first optical transmitter for optically modulating said single broadcast/image signal (APA, E/O 116 in Fig. 1; Nishigaki, PON interface device 13 in Drawing 2);

an Ethernet-PON OLT function processor for performing Ethernet-PON OLT functions (APA, 112 in Fig. 1);

a scrambler controller for controlling the plural scramblers according to respective broadcast/image selection information of the users from the Ethernet-PON OLT function processor (notice the controlling of the scrambler by line 10 of Fig. 3 of Moehrmann combined with the channel assignment in the channel tables in Drawings 5 and 8 of Nishigaki);

an IP router for routing communication data to an upper level IP network or to the Ethernet-PON OLT function processor (APA, IP router 111 in Fig. 1);

a second optical transmitter for optically modulating Ethernet (APA, "Ethernet-PON or EPON" on p. 2, l. 8) communication data to be transmitted to the plural ONTs (APA, transmitter 113 in Fig. 1);

a first optical receiver for receiving an optical signal from the plural ONTs, and converting into an electrical signal, and then transferring to the Ethernet-PON OLT function processor after its conversion, said optical signal from the plural ONTs that has been received (APA, receiver 114 in Fig. 1);

a broadcast/image channel selection controller for receiving the broadcast/image selection information from the plural ONTs through the Ethernet-PON OLT function processor, and outputting a control signal to the broadcast/image channel selection switch so as to allow the switch to select broadcast/image channels corresponding respectively to the plural ONTs (Nishigaki, channel setup equipment 12 in Drawing 2); and

a first device for coupling an optically modulated Ethernet (APA, "Ethernet-PON or EPON" on p. 2, l. 8) communication signal of wavelength λ_{DOWN} and an optically modulated broadcast/image signal of wavelength λ_B, and outputting the resulting signal.

The APA in view of Nishigaki and Moehrmann does not expressly disclose:

the first device for coupling an optically modulated Ethernet communication signal of wavelength λ_{DOWN} and an optically modulated broadcast/image signal of wavelength λ_B, and outputting the resulting signal is a wavelength division multiplexing (WDM) coupler.

However, WDM couplers are extremely well known and standard devices in the art for providing these coupling and outputting functions.

Regarding claim 11, the APA in view of Nishigaki and Moehrmann discloses:

The Ethernet-PON according to claim 6, wherein the OLT further includes a multiplexer controller for controlling said multiplexer for receiving the scrambled broadcast/image signals to combine the scrambled broadcast/image signals into the single signal (Nishigaki, control of the multiplexing in OLT 1 in Drawing 2 is implied by the channel tables in Drawings 5 and 8).

The APA in view of Nishigaki and Moehrmann does not expressly disclose:

combining according to a time division multiplexing scheme.

However, time division multiplexing is an extremely common mode of multiplexing. It is an obvious variation to employ a time division multiplexing scheme to implement the multiplexing of the APA in view of Nishigaki and Moehrmann.

Regarding claim 15, the APA in view of Nishigaki and Moehrmann discloses:

The Ethernet-PON according to claim 6, wherein the OLT further includes a multiplexer controller for controlling said multiplexer for receiving the scrambled broadcast/image signals to combine the scrambled broadcast/image signals into the single signal (Nishigaki, control of the multiplexing in OLT 1 in Drawing 2 is implied by the channel tables in Drawings 5 and 8).

The APA in view of Nishigaki and Moehrmann does not expressly disclose:

combining according to a frequency division multiplexing scheme.

However, frequency division multiplexing is an extremely common mode of multiplexing. It is an obvious variation to employ a frequency division multiplexing scheme to implement the multiplexing of the APA in view of Nishigaki and Moehrmann.

Regarding claims 7 and 12, claims 7 and 12 are claims that introduce limitations that correspond to the limitations introduced by claim 2. Therefore, the recited means in claim 2 read on the corresponding means in claims 7 and 12.

Regarding claims 8 and 13, claims 8 and 13 are claims that introduce limitations that correspond to the limitations introduced by claim 3. Therefore, the recited means in claim 3 read on the corresponding means in claims 8 and 13.

5. **Claims 4, 9, and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over the APA in view of Nishigaki and Moehrmann, as applied to the claims above, and further in view of Kobayashi et al. (U.S. Patent No. 4,661,950, hereinafter "Kobayashi").

Regarding claim 4, the APA in view of Nishigaki and Moehrmann discloses:

The Ethernet-PON according to claim 3, wherein the scrambler for performing the scrambling operation based on the specific function and initial state includes:

a shift register for storing the initial state and performing a shift operation by the subsequent logical operations (SHIFT REGISTER in Figs. 2-3);

a first exclusive-OR gate for performing an exclusive-OR operation between element values of the shift register, and outputting the resulting value to an input of the shift register (module-2 adder 7 in Figs. 2-3);

a second exclusive-OR gate for performing an exclusive-OR operation between input data and an output of the first exclusive-OR gate, and outputting the resulting value (module-2 adder 8 in Figs. 2-3).

The APA in view of Nishigaki and Moehrmann does not expressly disclose:

an AND gate for performing an AND operation between an output of the first exclusive-OR gate and an external enable signal; and

the second exclusive-OR gate for performing an exclusive-OR operation between input data and an output of the AND gate, and outputting the resulting value.

However, such usage of an AND gate is known in the art, as shown by Kobayashi (e.g., 54 in Fig. 4, 73 in Fig. 6). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include such usage of an AND gate. One of ordinary skill in the art would have been motivated to do this since it provides the common function of an enable function. That is, an enable function allows the simple function of turning on/off of a device, which is a standard function for any variety of devices, including scramblers.

Regarding claims 9 and 14, claims 9 and 14 are claims that introduce limitations that correspond to the limitations introduced by claim 4. Therefore, the recited means in claim 4 read on the corresponding means in claims 9 and 14.

6. **Claims 5, 10, and 16-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over the APA in view of Nishigaki, Moehrmann, and Kobayashi, as applied to the claims above, with reference to Kim (U.S. Patent Application Publication No. US 2003/0118184 A1).

Regarding claim 5, the APA in view of Nishigaki, Moehrmann, and Kobayashi does not expressly disclose:

The Ethernet-PON according to claim 4, wherein the specific function is expressed by the following equation:

$p(x)=c_nX^n+c_{n-1}X^{n-1}+ \ldots +c_2X^2+c_1X^1+1,$

where c_i is a constant of '0' or '1', x^i denotes the value of an i-th element of the shift register, and the constant c is set to '1' for elements of the shift register connected to the first exclusive-OR gate, and to '0' for the other elements of the shift register.

However, this equation is known in the art to correspond to the type of scrambler in Moehrmann (notice the same basic structure in Figs. 2-3 of Moehrmann and in Fig. 2 of Kim, same basic form of equation in paragraphs [0006] and [0010] of Kim).

Regarding claims 10, 16, and 20, claims 10, 16, and 20 are claims that introduce limitations that correspond to the limitations introduced by claim 5. Therefore, the recited means in claim 5 read on the corresponding means in claims 10, 16, and 20.

Regarding claim 17, claim 17 is a claim that introduces limitations that correspond to the limitations introduced by claim 2. Therefore, the recited means in claim 2 read on the corresponding means in claim 17.

Regarding claim 18, claim 18 is a claim that introduces limitations that correspond to the limitations introduced by claim 3. Therefore, the recited means in claim 3 read on the corresponding means in claim 18.

Regarding claim 19, claim 19 is a claim that introduces limitations that correspond to the limitations introduced by claim 4. Therefore, the recited means in claim 4 read on the corresponding means in claim 19.

Response to Arguments

7. Applicant's arguments filed on 15 November 2007 have been fully considered but they are not persuasive. Applicant presents four salient points.

Regarding the first and second points, Applicant states:

> "Applicant respectfully disagrees with and explicitly traverses the rejection of the claims at least for the remarks made in response to the rejection of the claims in the prior Office Action. However, applicant has elected to amend independent claim 1 to recite *the dynamically scrambling of digital information* ***requested by a user*** and *providing scrambling information* ***concurrently to the user with the scrambled digital data.***' Support for the amendment may be found at least on page 11, lines 14-15 ('[i]n the above method, a specific polynomial p(x) and initial state for each subscriber for scrambling is determined each time a subscriber selects a broadcast/image channel") and page 12, lines 9-12 ('[t]he same polynomials p(x) and initial states 227 as transferred to the scramblers 22-1, 22-2 and 22-16 are also transferred as signals 228 to the E-PON OLT function processor 27, so that they arc converted to Ethernet communication data and then transmitted to each ONT')" (REMARKS, p. 15, last full paragraph, emphasis Examiner's).
>
> "Hence, Moehrmann teaches that the initial settings of scrambling data are determined and...*provided* ***concurrently to the user with the scrambled digital data***" (REMARKS, p. 16, 1st full paragraph, emphasis Examiner's).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., (1) *the dynamically scrambling of digital information* ***requested by a user*** and (2) *providing scrambling information* ***concurrently to the user with the scrambled digital data***) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding the first point (1) "*the dynamically scrambling of digital information* ***requested by a user***", claim 1 does include "dynamically scrambling" of digital information, but claim 1 does not expressly include the additional limitation that this "digital information" is "***requested by a user***". Thus, this first point (1) is not persuasive.

However, even if claim 1 did include this additional limitation, the prior art of record does disclose this additional limitation (e.g., Nishigaki, "reception request" in abstract, channel tables in

Drawings 5 and 8). Moreover, notice the teaching of "dynamically scrambling" of Moehrmann. That is, "dynamically" is shown, for example, through the "initial setting...can be repeatedly modified" in col. 5, l. 22-26 and through "the structure of scrambler and descrambler...can be modified" in col. 5, l. 46-47. In other words, these modifications of the initial setting and structure show that the scrambling step is not "statically scrambling", but rather "dynamically scrambling". Accordingly, the prior art of record does show "*the dynamically scrambling of digital information* ***requested by a user***". Thus, this first point (1) is not persuasive.

Regarding the second point (2) "*providing scrambling information* ***concurrently to the user with the scrambled digital data***", claim 1 does include "providing scrambling information", but claim 1 does not expressly include the additional limitation that this "scrambling information" is provided "***concurrently to the user with the scrambled digital data***". Thus, this second point (2) is not persuasive.

Regarding the third point, Applicant states:

> "Hence, Moehrmann teaches that *the initial settings of scrambling data are* determined and provided to the receiver(s) on at least a time- or start-up basis and *not determined dynamically* ***based on a user request***" (REMARKS, p. 16, 1st full paragraph, emphasis Examiner's).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., (3) *the initial settings of* ***scrambling data are...determined dynamically based on a user request***) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding the third point (3) "*the initial settings of* ***scrambling data are...determined dynamically based on a user request***)", claim 1 does include "scrambling data", but claim 1 does not expressly include the additional limitation that this "scrambling data", or even that "initial settings of scrambling data", is "***determined dynamically based on a user request***". The claims are silent about how this "scrambling data" is determined. Thus, this third point (3) is not persuasive.

Regarding the fourth point, Applicant states:

> "In addition, the combination of Nishaigaki and Moehrmann fail to disclose that *an ONT transmits subscriber's broadcast/image selection information to an OLT through a transmitting path of a communication signal* ***so as to transmit only data of the properly selected channel***" (REMARKS, p. 16, 2nd full paragraph, emphasis Examiner's).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., (4) *an ONT transmits subscriber's broadcast/image selection information to an OLT through a transmitting path of a communication signal* ***so as to transmit only data of the properly selected channel***) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding the fourth point (4) "*an ONT transmits subscriber's broadcast/image selection information to an OLT through a transmitting path of a communication signal* ***so as to transmit only data of the properly selected channel***", claim 1 does include "an ONT transmits subscriber's broadcast/image selection information to an OLT through a transmitting path of a communication signal", but claim 1 does not expressly include the additional limitation "so as to transmit only data of the properly selected channel". Thus, this fourth point (4) is not persuasive.

Summarily, Applicant's arguments are not persuasive. Accordingly, Examiner respectfully maintains the standing rejections.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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DSK

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER